

# Borger Station Equipment, Savings, Public Health and Safety Proposal

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(From Stu Berg, resident close to plant,  
and Mothers Out Front representatives Katie Quinn-Jacobs and Lizzy Evett)

On May 1, 2017, representatives of Dominion Transmission Inc. spoke at the Varna Community Center in Dryden about operations at the Borger compressor station and changes proposed as part of its "New Market Project." During Q&A, it became apparent that because of old equipment and a lack of certain emission controls, methane and pollutant levels are much higher at Borger, a Title V facility, than at Dominion's other compressor stations. It is appropriate for the Town Board to inquire about improvements that can be implemented to bring the Borger Station up to par with the company's other facilities so that the people of Dryden are afforded the same protection as elsewhere.

A helpful tool is the EPA Natural Gas STAR Program, a voluntary initiative that encourages best practices to minimize the release of methane and other pollutants into the environment while promoting efficient and cost-savings operation. (<https://www.epa.gov/natural-gas-star-program>). Through the program, participants have identified several ways to limit methane loss and reduce levels of pollutants like VOCs (Volatile Organic Compounds), HAPs (Hazardous Air Pollutants), and formaldehyde--all of which are detrimental to human health. The payback for many of these actions is no more than 1 to 3 years, so participants can save a substantial amount of money in a relatively short timeframe. Participation also gives companies recognition for the positive steps they take to reduce emissions.

Although Dominion is one of twenty-six members of the Transmission & Storage Sector of the Natural Gas STAR program, there are significant program measures that it has failed to implement. By making feasible, cost-effective improvements at the Borger station, Dominion has an opportunity to better safeguard the environment, protect the public, and improve the company's image within the community.

## Proposal for the Dryden Town Board:

1. Dominion has admitted that none of the gas turbines at the Borger Station are equipped with an oxidation catalyst. An oxidation catalyst is equivalent to a catalytic converter on an automobile--required standard equipment on almost all vehicles produced since the 1970's. It is attached to the combustion exhaust stream to reduce pollutants such as carbon monoxide, formaldehyde, and VOC's. Dominion has committed to installing oxidation catalysts at other facilities impacted by its "New Market Project," including on new turbines at Horseheads, Sheds, and Brookman Corners. Notably, in response to public demand, Dominion has also committed to installing an oxidation catalyst on its **existing** Taurus 60 turbine at the Brookman Corners compressor station by October 2018. **Dominion should explain why oxidation catalysts have not been installed at the Borger station. The town board should ask when this will occur so that the residents of Dryden receive the same level of protection as other communities.** Some references here:  
<http://www.synergycatalyst.com/natural-gas-compression-catalyst/>  
[http://www.meca.org/galleries/files/MECA\\_comments\\_on\\_OTC\\_Gas\\_Compr\\_092611\\_final.pdf](http://www.meca.org/galleries/files/MECA_comments_on_OTC_Gas_Compr_092611_final.pdf)
2. Two of the three compressors at the Borger station are powered by very old Dresser Clark DC 990 turbines (one dating back to 1984). As such, they produce nitrogen oxide (NOx) emissions and other pollutants that greatly exceed that of the station's third turbine, a Taurus 70 turbine installed in 2010. In fact, during the recent community meeting, Dominion staff admitted that if the station's older turbines were replaced, the facility likely could fall **below** the Title V threshold for a major pollution source, which at Borger is triggered by NOx. Since the Dresser Clark turbines use wet seals, they also produce more fugitive emissions (methane, VOCs, and HAPs) than modern "dry seal" turbines. In the presence of

sunlight, NOx and VOCs create harmful ground-level ozone. Dominion staff has also admitted that these antiquated turbines are challenging from a maintenance standpoint.

Pollutant levels can be substantially reduced by replacing the two Dresser Clark turbines at Borger with modern equipment. For example, the Centaur 50 turbine manufactured by Caterpillar (same *Solar* series as the Taurus 70) with approximately 6000 horsepower would be a comparable substitute. (Alternatively, a single Taurus 70 turbine could potentially be used in place of the two Dresser Clark turbines.) Modern Caterpillar turbines have dry seals and are equipped with the lean-burn SoLoNOx feature. They can also be equipped with electric starters. **The town board should request that Dominion replace its old Dresser Clark turbines at Borger with modern equipment like at Horseheads, Sheds, and Brookman Corners.** Although turbine replacement is not inexpensive, costs may be mitigated by savings achieved with less maintenance or downtime and the fact that the older turbines would likely require replacement in the not-too-distant future anyway. (Note: The town board should not support substantially more horsepower that would allow additional compression or gas flow.)

3. The Natural Gas STAR program provides fact sheets on several additional methods for reducing methane loss and emissions at compressor stations and related infrastructure, some of which are identified below. **The town board should ask Dominion to explain whether these improvements are planned for equipment at the Borger station, and if not, why.** It should be noted that replacement of the Dresser Clark turbines would address or obviate many of the compressor issues identified below relating to seals, starters, and air/fuel ratio control. Other Gas STAR fact sheets relating to techniques and process operations may also be applicable. <https://www.epa.gov/natural-gas-star-program/recommended-technologies-reduce-methane-emissions>

#### **Compressors/Engines:**

[Wet Seal Degassing Recovery System for Centrifugal Compressors, PRO Fact Sheet](#) (payback 0-1 year)

[Replace Gas Starters with Air or Nitrogen, PRO Fact Sheet #101](#) (payback 0-1 year)

[Reducing Emissions When Taking Compressors Off-Line, Lessons Learned](#) (payback 0-1 year)

[Install Automated Air/Fuel Ratio Controls, PRO Fact Sheet #104](#) (payback 0-1 year)

[Install Electric Motor Starters, PRO Fact Sheet #105](#) (payback 1-3 years)

[Install Electric Compressors, PRO Fact Sheet #103](#) (payback 1-3 years)

[Replacing Wet Seals with Dry Seals in Centrifugal Compressors, Lessons Learned](#) (payback 1-3 years)

#### **Dehydrators:**

[Reroute Glycol Skimmer Gas, PRO Fact Sheet #201](#) (payback 0-1 year)

[Pipe Glycol Dehydrator to Vapor Recovery Unit, PRO Fact Sheet #203](#) (payback 0-1 year)

[Replace Glycol Dehydration Units with Methanol Injection, PRO Fact Sheet #205](#) (payback 0-1 year)

[Zero Emissions Dehydrators, PRO Fact Sheet #206](#) (payback 0-1 year)

[Convert Natural Gas-Driven Chemical Pumps, PRO Fact Sheet #202](#) (payback 1-3 years)

[Convert Pneumatics to Mechanical Controls, PRO Fact Sheet #301](#) (payback 1-3 years)

#### **Pneumatics/Controls, Valves, Other:**

[Convert Gas Pneumatic Controls to Instrument Air, Lessons Learned](#) (payback 0-1 year)

[Options for Reducing Methane Emissions From Pneumatic Devices in the Natural Gas Industry, Lessons Learned](#) (payback 1-3 years)

[Replace Burst Plates with Secondary Relief Valves, PRO Fact Sheet #605](#) (payback 0-1 year)

[Install Flares, PRO Fact Sheet #904](#) (payback 0-1 year)

[Install Electronic Flare Ignition Devices, PRO Fact Sheet #903](#) (payback 1-3 years)

[Replace Bi-Directional Orifice Metering with Ultrasonic Meters, PRO Fact Sheet #907](#) (payback 1-3 years)